ENGIN STORAGE

STURTEVANT

Mill Company, Boston.

Catalogue

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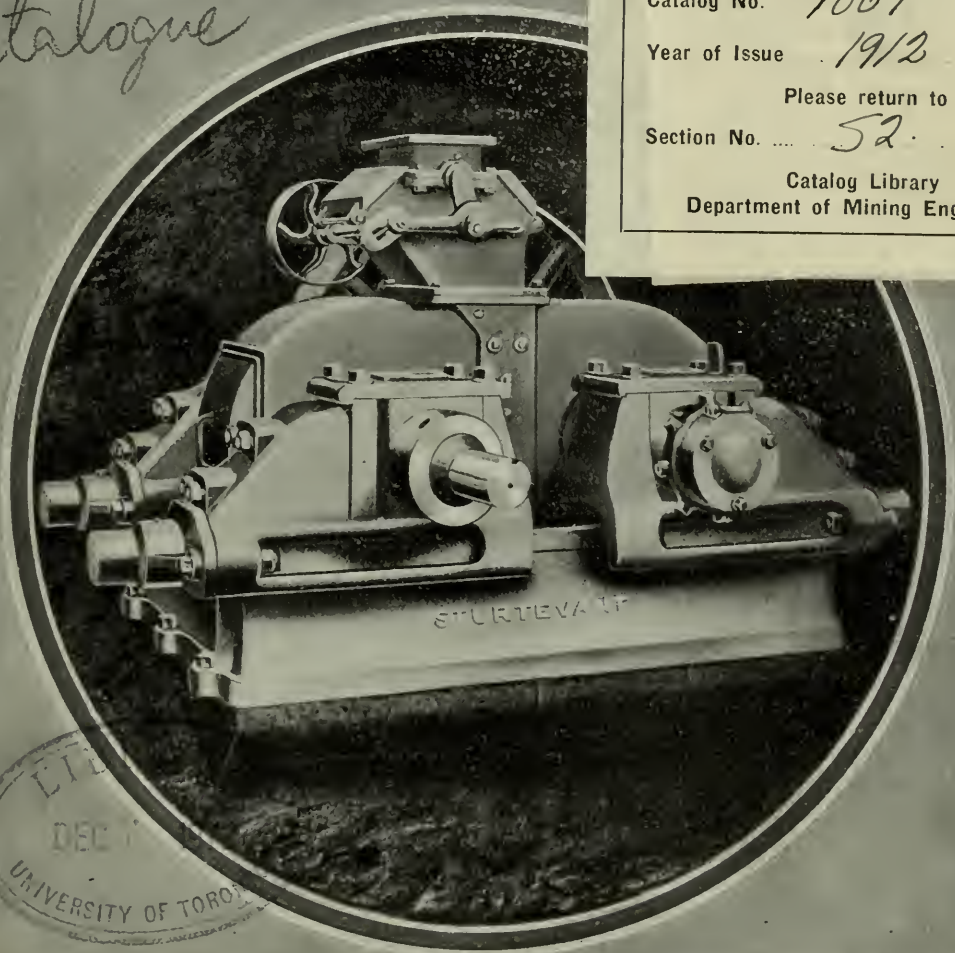

UNIVERSITY OF TORO

ROLLS

CATALOGUE
NO. 65A

ESTABLISHED 1883

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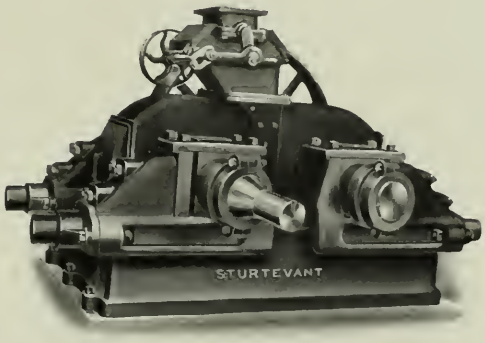
STURTEVANT MILL CO.

STURTEVANT

CRUSHING, GRINDING, SCREENING, MIXING, SACKING AND WEIGHING MACHINERY

ALL OF STURTEVANT QUALITY



PATENTED

AUXILIARY WORKS

BUFFALO, N. Y. AMERICUS, GA. NEWAYGO, MICH.

SALESMEN'S OFFICES

New York Pittsburgh Atlanta Cleveland Chicago Denver Victoria, B. C.

FOREIGN

STURTEVANT ENGINEERING CO., Ltd., LONDON

Paris Brussels Berlin Vienna Turin

STURTEVANT MILL COMPANY

HARRISON SQUARE BOSTON MASSACHUSETTS

THE STURTEVANT PLAN

Because performance equals expectation, a Sturtevant machine may be bought by those unacquainted with it, on the following terms:

" It may be agreed that the purchaser shall set it at work on dry material promptly after arrival, and if within thirty days after it is received the purchaser does not find it satisfactory in every respect, it can be returned to seller's works, in good condition, ordinary wear excepted, and with freight prepaid, and the buyer's obligations hereunder thus be closed and ended. If buyer's option to return is not availed of as is herein provided, the machine must be paid for as agreed."

Every prospective purchaser is invited to send samples (transportation prepaid) to our Testing Department at Harrison Square, Mass., which is equipped with machines of full size. Here, without charge, tests may be personally conducted, and as thoroughly as required to determine the adaptability of Sturtevant machinery. Trials are frequently ordered, and results reported. This department is largely availed of, and decisions of much importance to buyers are frequently made and costly errors avoided.

The experience gained in producing machines of the highest class for so many years, has a real value. Designs tested by thousands of users, and faults discovered and corrected form a strong basis for confidence. It is only gradually that the best machines are evolved. That they do not break is because we have been taught where to make them strong; that they give maximum outputs is because experience has taught how to make them effective. What each has done is known. This company sells no machine that it does not believe fit for the purpose. Machinery that is sure to run well is certain of appreciation.

STURTEVANT STANDS FOR THE BEST

STURTEVANT MILL COMPANY

Harrison Square BOSTON Massachusetts

STURTEVANT BALANCED CRUSHING ROLLS

CRUSHING ROLLS are intermediary machines, usually placed after Crushers to reduce finer. They break various sizes of rocks, according to the Roll diameters.

It is seldom desirable to feed even large Rolls with rock coarser than 2″ to 3″, or to expect a product finer than 30 mesh from any roll. But never can this great reduction (3″ to 30 mesh) be made at once in any roll. Errors are frequently made by the inexperienced in an endeavor to make too great a reduction at once.

A single set of rolls on hard rock, or ore, should never be required to reduce rock more than four to one, and three to one is better practice: i. e., with a feed of 1″ rock, the finest it should be crushed at one operation is ¼″, and ⅓″ would be accomplished with more economy. If a greater reduction than three to one, or possibly four to one, is required the number of rolls should be increased. For example: To crush 1½″ rock to ⅛″ two sets of Rolls would be required — the first to reduce the 1½″ rock to ½″, and the second set to crush the ½″ material to ⅛″, and so on.

Because Rolls are crushers, and not grinders, there should be no rubbing or grinding action, and by eliminating this, the product is granular and the roll endurance great. The fineness of crushing is regulated by the distance the shells, or tires, are set apart, and as these members should never run in actual contact, a finer output than 20 to 30 mesh on hard substances cannot be properly obtained.

Rolls have many desirable qualities; they are simple, substantial, slow-speed machines, requiring little attention, and using small power to produce very large outputs on the coarser grades of work. Next to Crushers, Rolls are the most economical rock reducers, when operating upon suitable material at proper settings. If coarser than 1½″ work is required, it is usually cheaper and better to use Crushers; and if finer than a 20 mesh product is wanted, Grinding Mills are, generally speaking, much superior.

Sturtevant Rolls are therefore made for coarse, and also for finest roll work. They are all balanced.

Balanced Rolls are those in which the shocks of rock crushing balance and offset each other. These rolls run, as will be noted (in later pages) with only one-quarter the vibrations of other machines of this class and for this reason can run faster and last longer than others.

STURTEVANT BALANCED CRUSHING ROLLS

DEFINITION OF BALANCED ROLLS

BALANCED ROLLS are those in which all the shock movements of crushing are made in opposite directions at the same speed, at the same time, and with equal force; these movements thus exactly counteract and offset each other. They run with so little vibration that no special foundation is required. They can run safely on any strong mill floor.

DESIGN

They are designed on the following principles:

1st: Fewest possible parts move at all.
2d: Speed of parts moving to shock is low.
3d: Parts moving oppositely have equal weight.
4th: Parts moving oppositely have equal speed.
5th: Opposite movements are made at the same time.
6th: Such shocks as are unavoidable are cushioned by springs.

We believe our engineering friends agree that on these lines we have introduced types remarkable for durability and easy running. Each point appeals to the common sense of every reader.

Sturtevant Rolls are of two types: Balanced and Plain-Balanced Rolls. They are the same in principle, and there is no difference in the quality or quantity of output. Why they are different in price will be shown.

BALANCED ROLLS

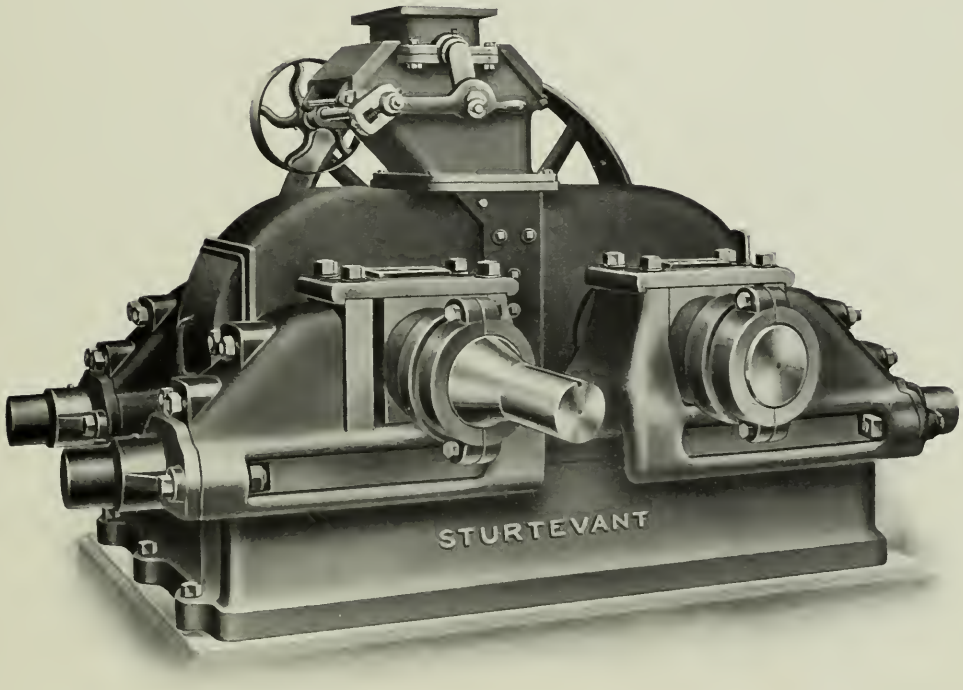
These most massive of all rolls, are the best that money and experience, can produce nothing has been left undone that could make them better.

PLAIN BALANCED ROLLS

Plain Balanced Rolls are designed on the same lines, but are less expensive because some costly refinements have been omitted; but we have been able to add portability.

Most of the discription applies to both grades of Rolls, but in the latter part of this catalogue the differences are enumerated.

STURTEVANT BALANCED CRUSHING ROLLS



PATENTED

36 in. x 16 in. Balanced Rolls.
Crushing shocks **quartered.**
Notice the massive and simple construction.
Adjustment *automatic* and cannot be wrong.

STURTEVANT BALANCED CRUSHING ROLLS

STURTEVANT INVENTIONS

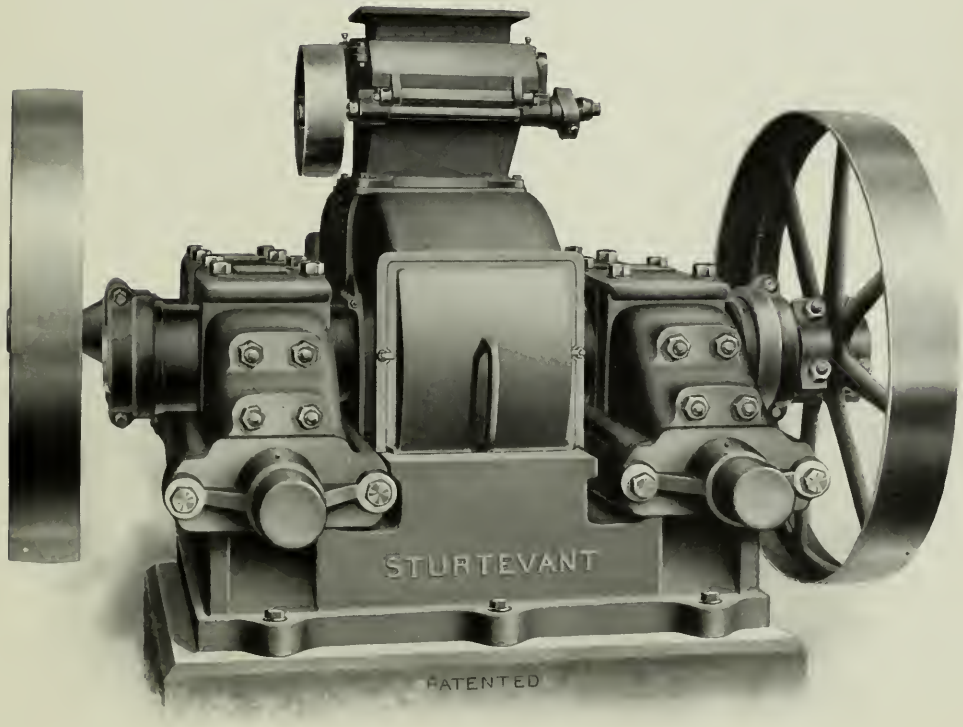
Balanced Rolls are distinctive Sturtevant inventions and combine the best features of the Spring and Rigid types, but have not the faults of either. They are rigid to all ore, or rock breaking stresses, yet are able to give instant relief should iron or other uncrushable material get between the tires. No throwing of belts, caused by overfeeding, as in Rigid Rolls, nor are they subject to the shocks caused by the excessive reciprocations of ordinary Spring Rolls.

Springs are placed back of all four bearing boxes, allowing each box to move back in relief; and they move equally and oppositely at the same time, thus exactly balancing and off-setting each other. These springs act as a safety, like the breaking piece in some Crushers and they are stiff enough to force the rolls to crush the hardest ore, yet flexible enough to prevent accidents. Weaker springs may be substituted and the rolls thus made as flexible as any. The pedestals that hold the box bearings do not move at all, except for adjustment, thus the reciprocation of these heavy parts is avoided. A shaft has never broken because there are no crystalizing shocks.

Special car-box bearings are used, the same as on railway cars, and these are dust-proof. The Roll heads or hearts are not removed in replacing tires, and the shells may be kept true for finest work without being removed, (by means of our special "Rapid Tire Turning Device.")

Adjustments are automatic in Balanced Rolls — no shims — and adjustments cannot be made wrong. The space between the Rolls is always in the same line; thus the shields are never moved. Every part has been designed for simplicity, accuracy of output, and the convenience of the operator; no other roll is in the same high class.

STURTEVANT BALANCED CRUSHING ROLLS



36 in. x 16 in. Balanced Rolls

The Rolls never need removal from the frame until the shells are worn out because the shells can be turned up *in place*.

STURTEVANT BALANCED CRUSHING ROLLS

It is sometimes objected to spring Rolls that their outputs contain too much oversize, which requires to be screened out and returned at considerable cost. All this is true of some spring rolls, (but not of Sturtevant's), and to cure this fault some makers attempt absolutely rigid, springless rolls. Such cannot separate to let out oversize, or in fact anything else, consequently if overfed, or if an uncrushable substance gets between the roll faces, the machine must break or stop. Great care, therefore, must be exercised or breakage or stoppage is inevitable. A safety breaking piece has been used by a few makers, but this breaks too often if the design is safe, and if it is too strong, the roll frame or shafts suffer, or the machine is stalled. It is not surprising that these conditions, generally, soon led to the abandonment of rigid rolls.

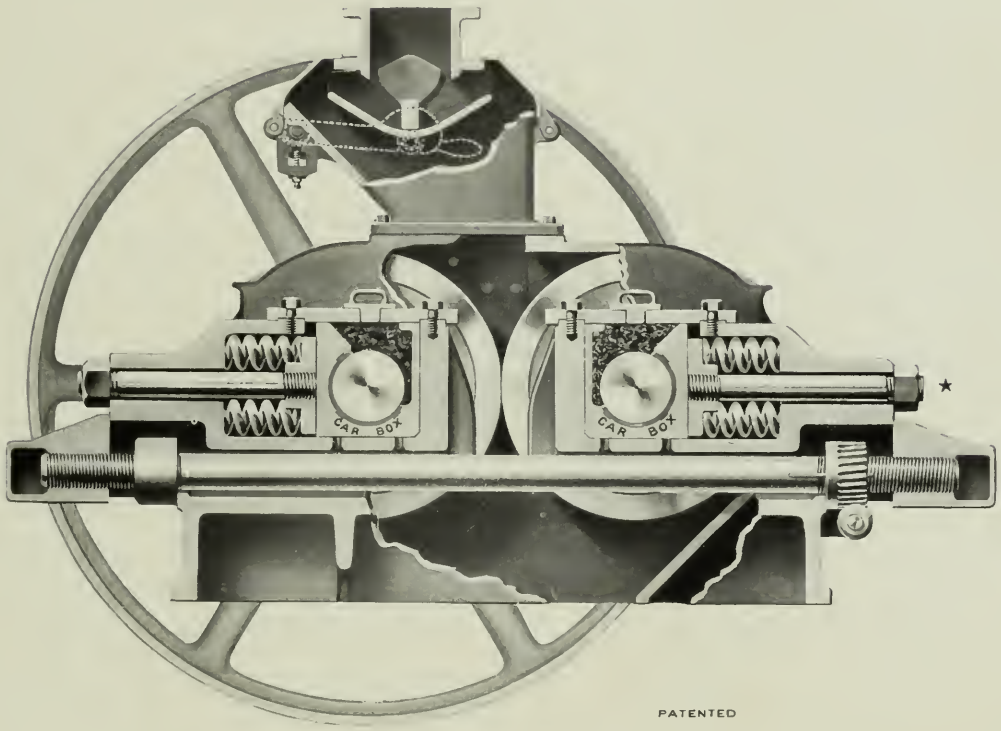
There is one advantage the springless rigid roll can claim—it is cheap. And only one objection—that it isabsolutely rigid. It is called upon to resist the irresistible. It always runs hard; and on most materials has hot bearings, and often attains a bent or broken shaft, and not infrequently, unless it stops, a broken back. Balanced Rolls have as much rigidity as is useful or safe.

NOT NEEDED

It would be serious indeed if it were necessary to produce springless rolls in order to obtain desirable rigidity; but, fortunately, sufficient rigidity can be had with springs. It is only a question of spring size. Massive springs in Balanced Rolls can be set to be practically inflexible to any rock. These spring rolls are built to endure the hardest work, and do not release more oversize (even in releasing materials that are uncrushable) than do rolls that cannot open at all, and that if overfed must stall or break the machine. It is plain that these Sturtevant massive springs can be replaced by more flexible ones, and thus the rolls made as sensitive as any others whatever.

Balanced rolls are designed to be rigid for every useful purpose, and no argument is needed to establish the importance of rigid spring construction: but springless Rolls are only rigid until they break, while Balanced Rolls are always rigid until the time comes when they must either retreat or break, and then they do not break.

STURTEVANT BALANCED CRUSHING ROLLS

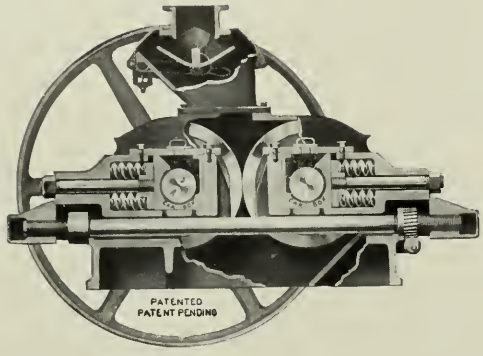


26 x 15 Balanced Roll (Side View)

Notice that springs are placed behind each car-box bearing, causing all crushing shocks to be exactly balanced and that only the car-boxes move in crushing instead of the massive pedestals, the movements of which cause the heavy shocks and wear of the expensive frames and pedestals of other rolls.

★ These nuts are removed when the roll is in use, or backed away from the pedestal. They are only needed to pull back the springs to permit of removal of car-box bearings and shaft.

STURTEVANT BALANCED CRUSHING ROLLS



DESCRIPTION

The massive bed frame carries heavy pedestals that are tied together in pairs, and the opposite pedestals can be screwed to or from each other at the same time by turning their tie-rods by a worm-geared cross shaft actuated by hand, thus the pairs of opposite pedestals are drawn equally together or separated.

The pedestals carry the roll shaft in car-box bearings, and by screwing the four pedestals (at the same time) either together, or apart, the crushing distance between the Rolls is regulated with exactness. No readjustment of shields is ever made.

The shaft bearings carried in the pedestals are of the car-box type, and the springs that hold each box bearing in place, and that receive the shock of crushing, are placed in recesses in the back of each pedestal. A removable steel plate under the car-box, protects the pedestal from wear. The pedestals never move, except to adjust the roll distances, therefore neither frame nor pedestal suffers wear, or serious shocks.

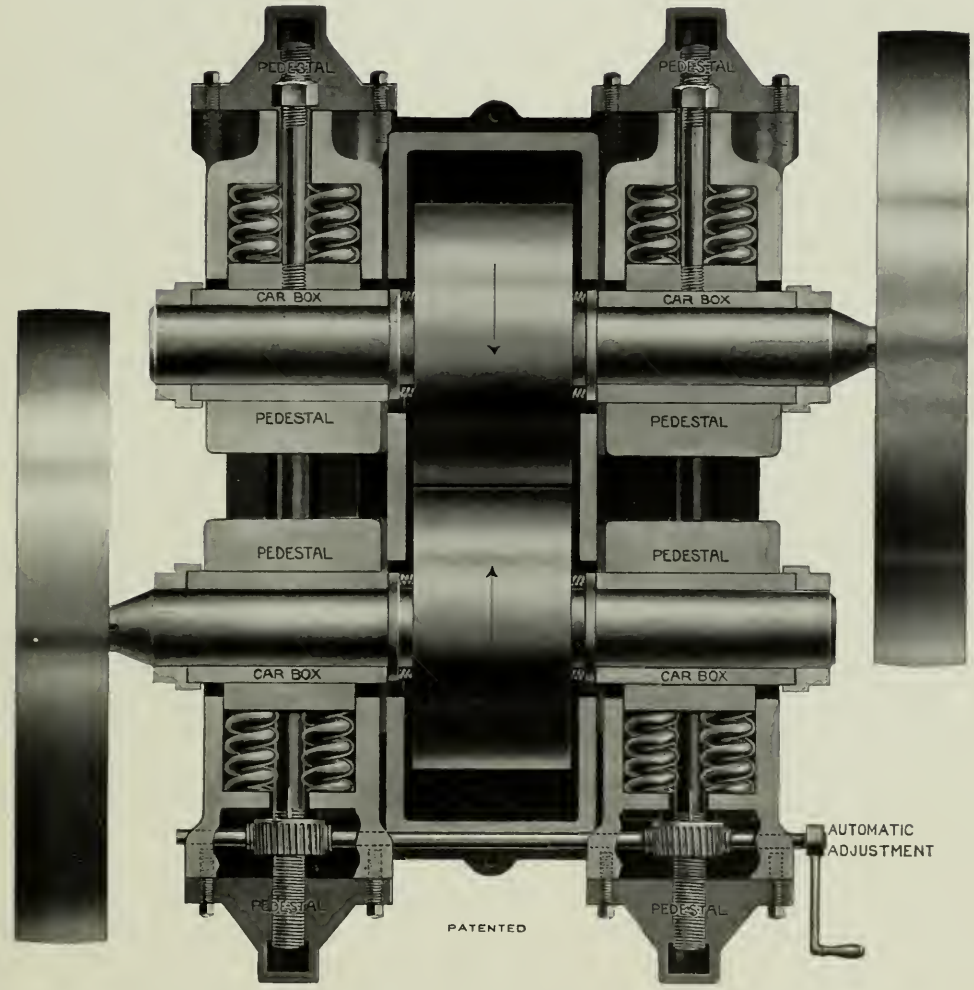
All shocks produced in crushing rock are absorbed and cushioned by the pedestal springs. The shafts are elastically held by the car-box bearings, just as in a railway car, and the axles cannot by any possibility be cramped. The car-box has a pocket filled with waste and oil and thus the bearing is perfectly protected from dust.

It will be noticed that the nuts on the powerful spring bolts in the pedestal heads when turned up compress the car-box springs so that the car-box bearing can be quickly released and slipped off the shaft when it is necessary to remove the shaft; but these nuts should be loosened or removed when the rolls are running, because they are only intended to compress the springs so the car-box bearing can be removed.

When rocks are introduced between STURTEVANT ROLLS it is seen that all the Roll shocks are oppositely made—at the same time—and because the corresponding parts are all of equal weight, and moving oppositely at the same speed, they exactly counteract and balance and offset each other.

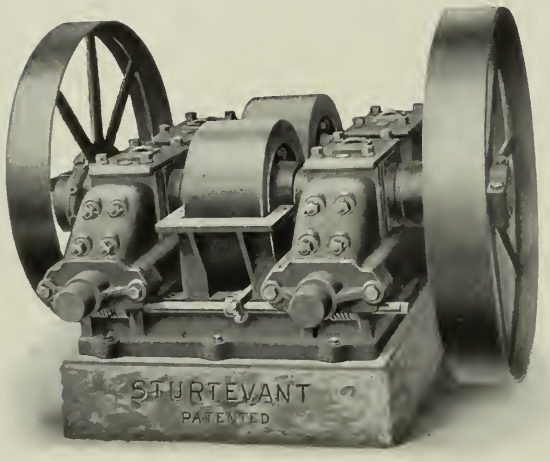
Note—Remember Sturtevant Roll tires may be kept perfectly true by *turning* in place with a lathe tool

STURTEVANT BALANCED CRUSHING ROLLS



This cut illustrates the Automatic adjustment of Balanced Rolls. By turning the handle on the cross shaft the distance between the roll tire or shells can be regulated to a nicety while the machine is running, and the product modified accordingly. The rolls always remain parrallel and cannot get out of alignment. Lateral adjustment is made with a spanner wrench.

STURTEVANT BALANCED CRUSHING ROLLS



SHOCKS QUARTERED

It has been shown that in these Rolls such shocks as are unavoidably produced are QUARTERED:—that is, they are made with only one-quarter the usual force.

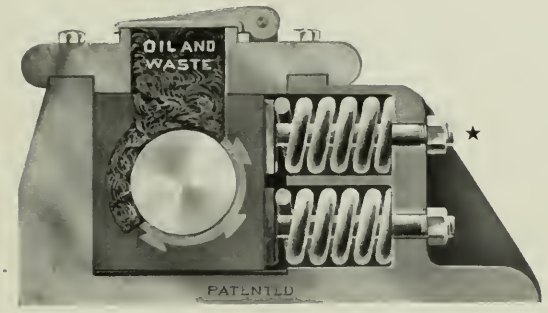
WHY

In view of its importance, we venture to restate and further explain. Because the opposite Roll-heads are both made to move apart equally, under excessive stresses, each roll moves only half as far as in common rolls; for usually one Roll is fixed on the frame, and the other (with its massive pedestal) makes all the moves. A common Roll has therefore to move back twice as far in the same time: therefore twice as fast. The shock of this longer and more rapid movement equals the mass multiplied by the square of the velocity (MV^2); this figures FOUR; hence the shocks suffered by STURTEVANT BALANCED ROLLS (moderately stated) are of only one-quarter the usual severity. But they are really much less than this — because a Balanced Roll does not carry its heavy pedestal with it when it reciprocates, as do all rolls of common type. Even if STURTEVANT ROLLS were not balanced they would have the great advantage of moving reciprocating parts of less weight — but balancing adds immeasurably to durability.

ADJUSTMENTS

No shims are used in adjusting these automatic balanced STURTEVANT ROLLS; the large screw tie-rods regulate the distance apart, and hold the Rolls against any pressures. The tire faces are sure to be parallel.

STURTEVANT BALANCED CRUSHING ROLLS



CAR-BOX ELASTIC BEARINGS

Too much cannot be said in praise of this important improvement in Rolls. The car-box is the most reliable bearing known to mechanics. It requires the least attention, endures the hardest usage, withstands safely, and cushions the heaviest shocks, and is dust-proof. It is also flexible to the shaft movements. The car box is cushioned by the heavy pedestal springs, exactly as in a railway car, and the shocks softened in an equal degree.

This is a distinctive Sturtevant invention, and we are proud of it. The car-box on railway axles operating under most trying conditions of shock and dust, has superseded all other bearing devices, and it is no less effective in Rolls.

PEDESTAL SPRINGS

These massive pedestal springs crush any rock whatever. They can be made as light as wanted for those who like a more elastic roll. They can even roll out ordinary iron or steel. No breaking piece is required to save the shafts, or bearings, or frame, and because no rock properly fed can force the rolls apart, no absolutely rigid rolls can give a product more free from oversize.

NO PEDESTAL WEAR

The bearing boxes rest on renewable steel plates, and since the heavy pedestals do not reciprocate in the frame, as in common Rolls, there is no wear on the grooved pedestal seats or the Roll frame. In other constructions the wear of these expensive parts is frequently serious.

The tires of Sturtevant Rolls may always be kept true by turning up in place with a lathe tool.

★ These nuts are removed when rolls are in use, or backed far away from pedestal—they are only useful to turn back the springs so that the car box can be removed.

EXPANDING HEARTS

The expanding heart is also an invention worthy of these high-class rolls. This also is a Sturtevant design of note. The shaft is tapered, instead of the roll shell as in others, thus permitting the shell or tire to be replaced without removing the heart. By using the set screws supplied with the Rolls, the expanding hearts are loosened, then they contract and the shells may be easily slipped off or on. The hearts are expanded and firmly hold the shells in position, by setting up on the through bolts. They never loosen.

We believe every engineer examining these rolls will admit that they are the first to have embodied in their design up-to-date constructive science. They ought to be better than any other Rolls — and they surely are.

It should be noted that although Balanced Rolls are rigid to all rock in crushing — because of the unusual strength of the springs generally preferred — it is yet clear that lighter springs can be supplied to any parties desiring to try Balanced Rolls with common springs. They will do ordinary work — but with incomparably less shock and pound and can consequently run faster and do much more than others — and still be far more durable.

Balanced, and Laboratory Roll Specifications

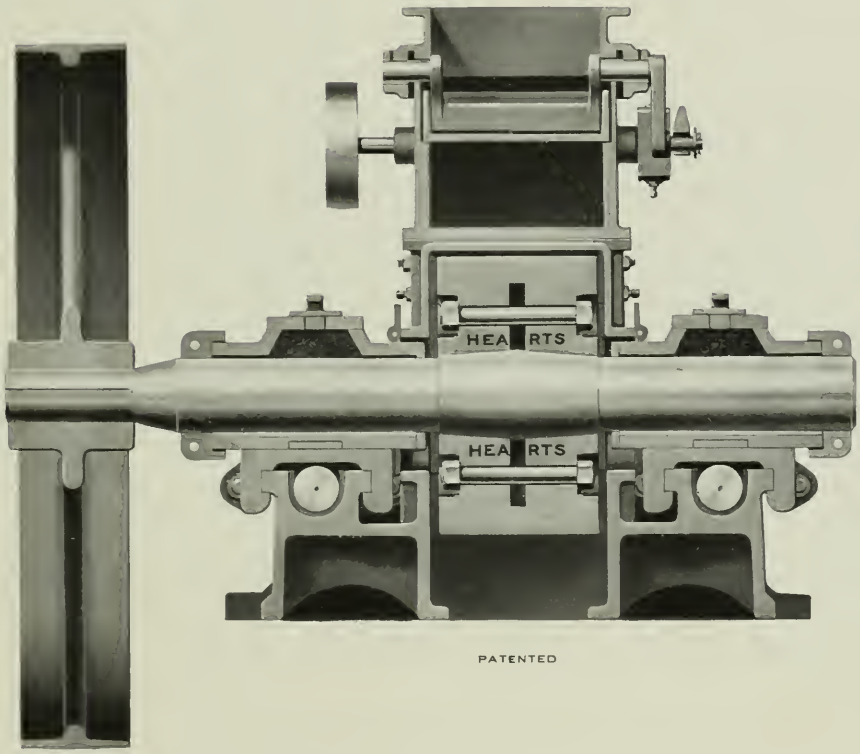
Code Word	Size in.	Pulley in.	Approx. Horse Power	Speed r. p. m. *	Approx. Length	Approx. Width	Height with Fly Wheel Approx.	Approx. Weight Heaviest Piece	Approx. Weight Net	Approx. Weight Gross
ƒBilley	Laboratory 8 x 5	18 x 4	1	150	33 in.	29 in.	22 in.	200	700	750
Bonnie	Balanced 16 x 10	48 x 4	4	150	5 ft. 9 in.	5 ft.	4 ft. 6 in.	900	6200	7200
Ceabo	" 21 x 10	60 x 6	8	125	6 ft. 9 in.	6 ft. 0 in.	5 ft. 2 in.	1650	10700	13200
Ceaden	" 26 x 15	66 x 10	10	100	8 ft.	8 ft.	5 ft. 6 in.	2750	16800	20600
Ceasel	" 32 x 16	72 x 10	15	90	9 ft. 4 in.	9 ft.	6 ft. 5 in.	3700	32000	35000
Ceatry	" 36 x 16	72 x 10	18	80	9 ft. 8 in.	9 ft.	6 ft. 6 in.	6250	36500	40000

* The Speed of Rolls varies according to size and kind of material.

ƒ The Laboratory Rolls have springs back of two bearings only.

SUBJECT TO CHANGE WITHOUT NOTICE.

STURTEVANT BALANCED CRUSHING ROLLS



26 x 15 Balanced Roll. (End View) showing Expanding Hearts
Also its simple massive construction, side and end adjustments, perfect automatic feeder, etc.

STURTEVANT PLAIN-BALANCED ROLLS

Plain-Balanced Rolls are (excepting only Balanced Rolls, which they so closely approach in usefullness) the best that can be had, and at the same time are less costly than others.

By adopting unbreakable tie rods, which do not require heavy pedestals, and massive bed frames, we have reduced the weight of these rolls more than one-half and the cost accordingly. Also, by leaving out the expensive automatic devices for nicest adjustments while running, another saving has been affected; but all the essential features of the highest class rolls have been retained.

ADJUSTMENTS

In materials and workmanship they are the same as Balanced Rolls; but adjustments are made as in common rolls — by shims. These however, are of improved design, and roll distances are changed without effecting roll pressures. All of the other remarkably good features of Balanced Rolls may be seen in the following illustrations of these.

PORTABILITY

Plain-Balanced Rolls have the great advantage of being portable. They are also the strongest Rolls that have ever been built. By portability, it is meant that two men can unload very large machines, and no part is too heavy for a farm wagon to carry over usual bad roads and weak bridges. This admirable feature is appreciated by every user of machines in difficult situations. Freight bills are also more than halved.

SHAFTS

Forged high carbon steel, fitted with Sturtevant Patent Expanding Hearts, permit the Roll shells to be removed or replaced, without removal of the hearts.

BEARINGS AND DUST EXCLUDERS

Car-box type, babbitted, of generous proportions; with babbitt dovetailed in, and all parts interchangeable; spring, and self-adjusting dust-collars thoroughly protect these bearings from dust and dirt.

ADJUSTMENTS

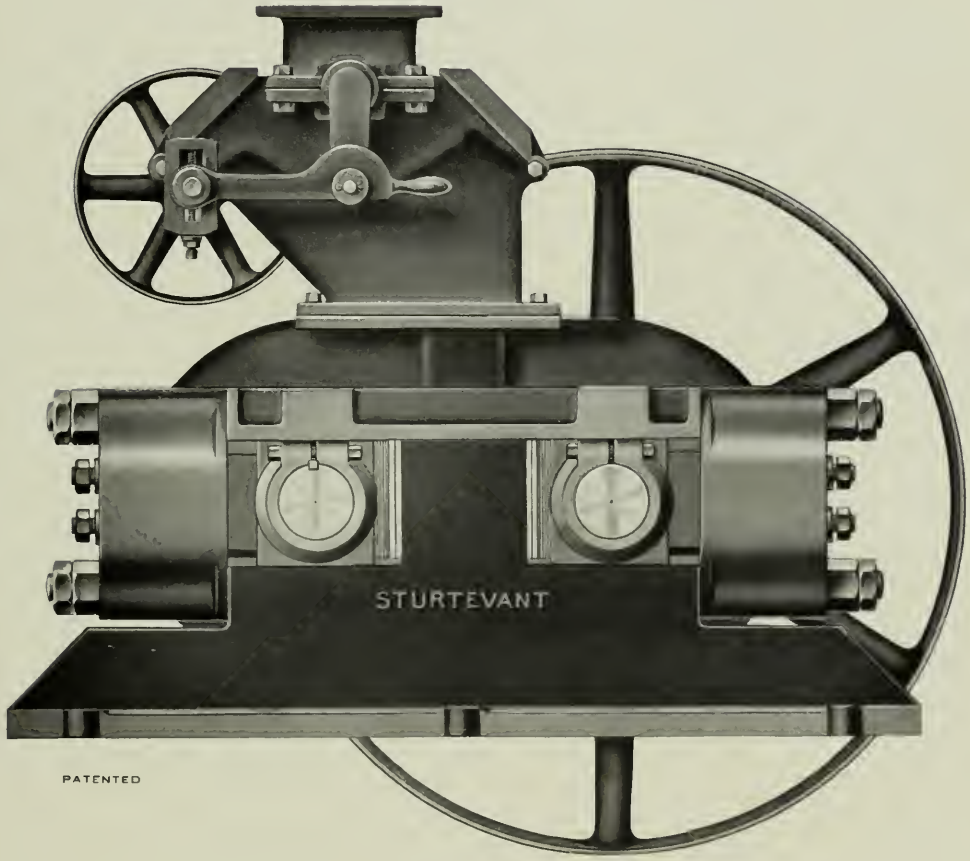
Roll setting is accomplished by placing shims between bearings and the anvil block of bed; special bolts are provided for slightly compressing the springs; thus removing their pressure and permitting the shims to be taken from one side of the box and placed at the other side. By this method the spring pressure remains constant.

The side adjustment, to prevent tire grooving, is obtained by the special Clamp Collar Device.

TIRES

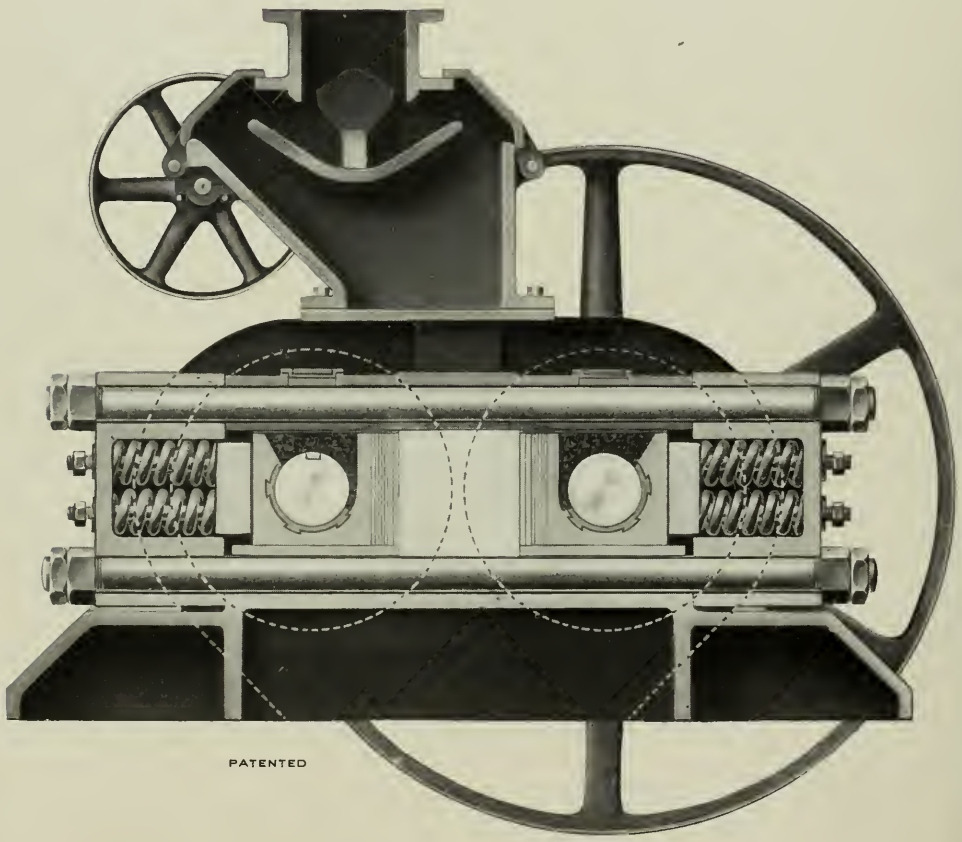
Forged, .85 carbon steel, are turned throughout.

STURTEVANT PLAIN-BALANCED ROLLS



20 x 14 Plain-Balanced Rolls
With Case and Feeder
Rigid Tie Bar Design, Automatic Feeder, Portable Construction, Car Box Bearings, Perfectly Balanced.

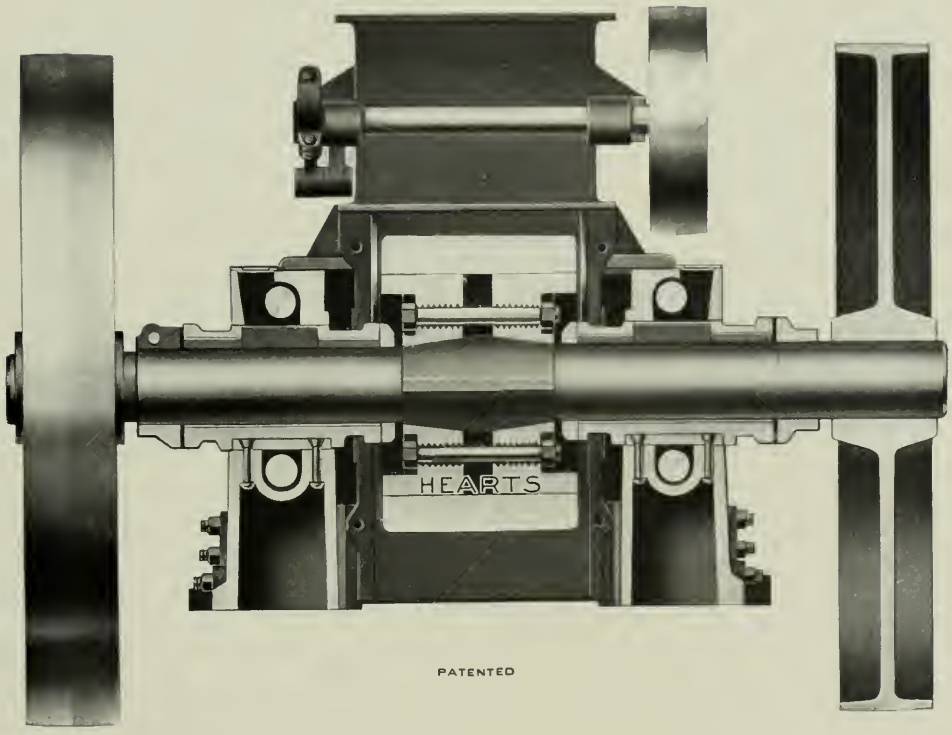
STURTEVANT PLAIN-BALANCED ROLLS



20 x 14 Plain-Balanced Rolls

NOTICE:--This Plain-Balanced Design. Massive Tie-Bar Construction, which is rigid and unbreakable. Car Box bearings, simple and dust-proof, strong springs back of each shaft and bearing. Automatic Swing Feeder. Improved shim adjustment. Simplicity and strength of this Portable Design.

STURTEVANT PLAIN-BALANCED ROLLS



20 x 14 Plain-Balanced Rolls

NOTICE:—Size of Shaft and Bearings. Patent expanding Hearts which are not removed when replacing shell or tire. Taper on Shaft but not on shell. Generous proportions of essential parts.

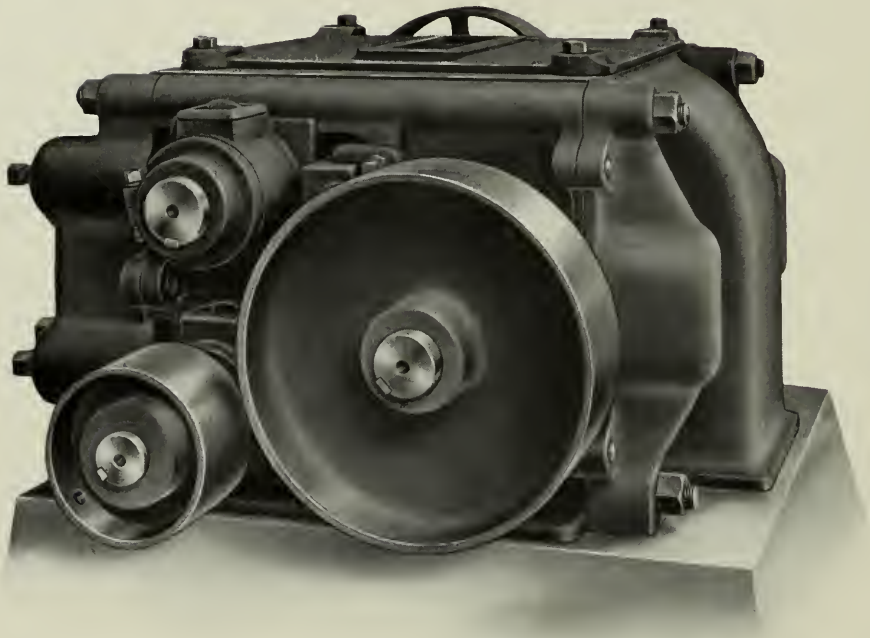
Specifications Plain-Balanced Rolls

Size inches	† Code Word	Pulley dia. and face inches	Approx. H. P.	Speed R. P. M.	Length over all, inches	Width over all, inches	Height over all, inches	Approx. weight heaviest piece	Approx. weight net	Approx. weight gross
*12 x 12	PLAG	36 x 6	4	150 - 200	48	52	43	375	3000	3400
20 x 14	PLEM	48 x 6	8	100 - 150	68	79	58	1150	8300	9000
22 x 14	PLIP	48 x 6	8	100 - 150	70	79	58	1150	9000	9700
36 x 16	PLYD	66 x 10	15	50 - 100	104	94	76	1425	21500	23000
38 x 16	PLOSS	66 x 10	15	50 - 100	104	91	76	1425	22500	24000

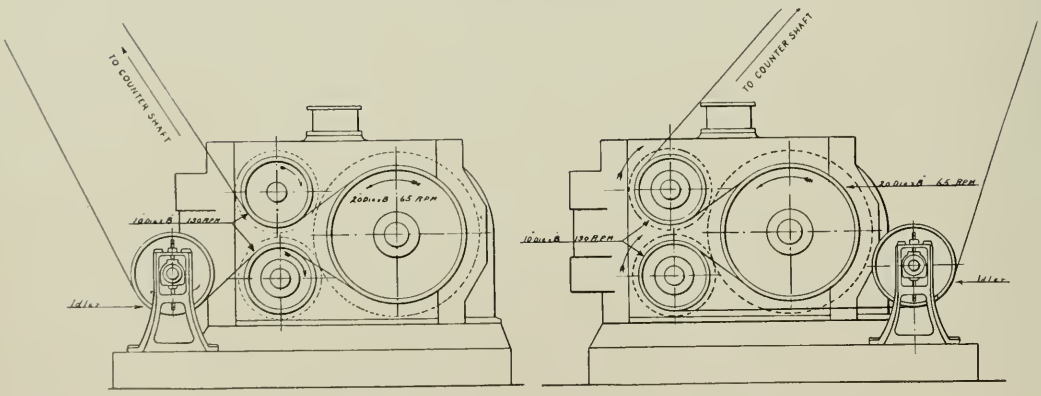
* Also made sectional for mule-back transportation, no part weighing over 350 lbs.

† If with feeder affix FE to code word.

STURTEVANT TRI-ROLL MILL

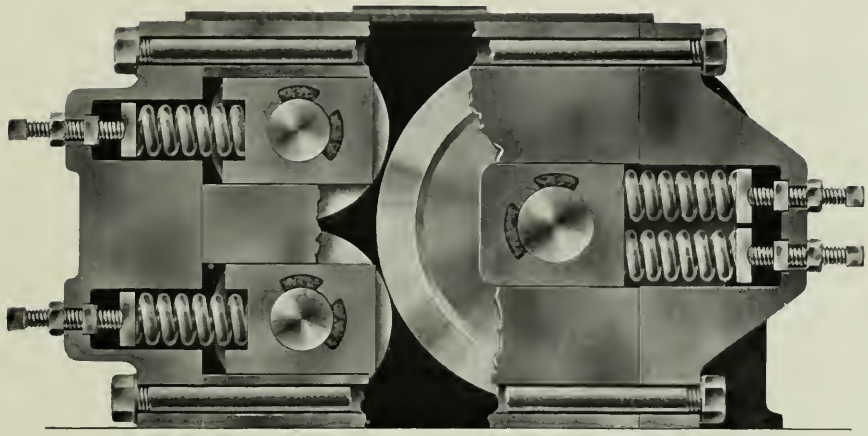


The Tri-Roll Mill gives two complete Roll reductions in one machine.
See opposite page.



Alternative Arrangement of Belts for Driving Tri-Roll-Mill

STURTEVANT TRI-ROLL MILL

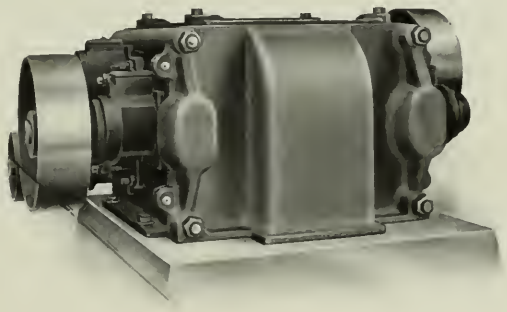


It has been explained why Rolls cannot make a greater reduction than 3 or 4 to 1 once through. Often times to save space, expense or complication, it ts desirable to crush finer than can be accomplished in one set of ordinary Rolls.

To meet this demand the Tri-Roll Mill was built which combines two Rolls in one frame and its output is the same as if two machines were used.

Costly mechanical complications were avoided by using one large Roll and two smaller Rolls, all driven by one belt as illustrated. The small top Roll being set for the first crush and the second small Roll to further reduce this product.

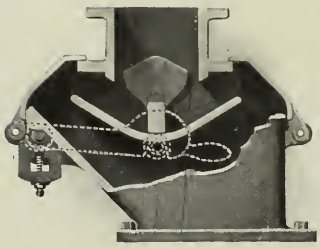
The Tri-Roll Mill can take rock 1 inch in size and crush to $\frac{1}{2}$" to $\frac{1}{16}$". Its operation is the same as other Rolls; springs are placed back of each bearing to balance and minimize shock. It is heavy, compact, simple, easy to adjust, inexpensive to buy, belt, erect and run.

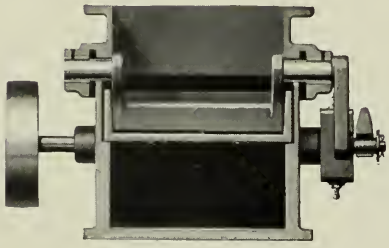


SPECIFICATIONS

Size of Rolls	Length Over All	Width Over All	Height Over All	Approx. Horse Power	Pulleys	Speeds	Approx. Weight Net	Approx. Weight Gross	Code Word
1 - 24"x 12" 2 - 12"x 12"	4'-3"	5'-9"	2'-9"	6-8	20" x 6"	60 and 120	5900	6400	Trirol

STURTEVANT AUTOMATIC FEEDERS





PATENTED FEEDERS

The above illustrations show our improved automatic Feeders (also a Sturtevant invention) for Rolls, or any machine requiring an even amount of material. It is simple in operation, durable, the adjustments are perfect and easily get-at-able. The parts are few and quickly and cheaply replaced. These are supplied at additional price with all of the "Balanced" and Plain-Balanced Rolls.

OPERATION

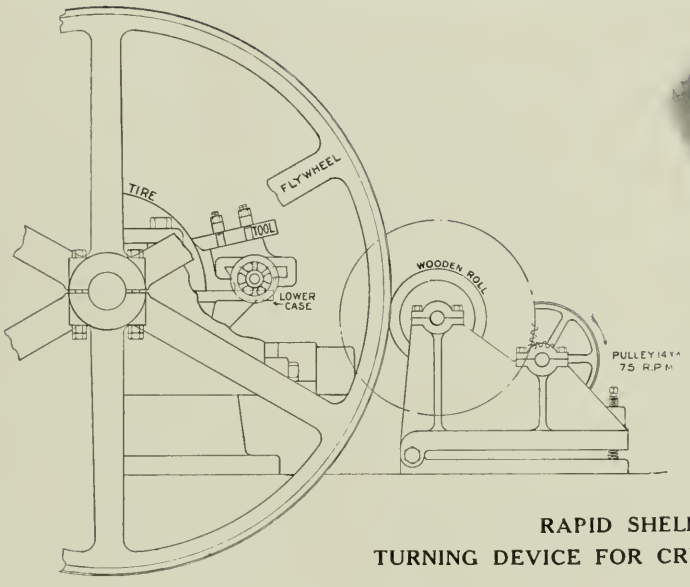
A scraper and a curved pan, the first moving parallel to the latter, both replaceable — constitute its active parts. The material is fed through the hopper upon the curved replaceable pan, from which it is swept off at each end alternately, the same amount at either end, resulting in a continuous even feed upon which a machine can do its best work.

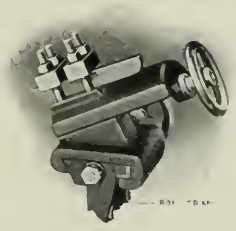
The feed is regulated by a variable throw eccentric which operates the scraper by means of a connecting rod. By lifting this connecting rod by its handle the feed is instantly stopped.

At either end of the feeder, doors open allowing a complete inspection of its interior, even when running, to observe the quantity and distribution; also the exact setting of the rolls may be seen from these points.

Weight approx., net 700 lbs.; gros 800 lbs. Code word: "Dubuque."

STURTEVANT ROLL TURNING DEVICE





RAPID SHELL
TURNING DEVICE FOR CRUSHING ROLLS

The shells or tires of all rolls are inclined to hollow, groove and flange, and this frequently cannot be avoided, even under skilled management. As the width of a shell is increased uneven wear is more serious, for when out of face a wide shell is surprisingly inefficient.

Intelligent users of rolls for fine work turn the shells occasionally, although it is known that this operation should be frequent. But it is a formidable undertaking to remove belts and dismantle common heavy rolls, and then carry these massive parts to a large and expensive lathe. The shells should be so hard as to require a lathe of power, and unusually slow cutting speed; and the tool should be of special air-hardened steel. Soft shells turn easier, but are sooner out of face again.

The replacement and re-adjustment of the Roll in its frame are not less troublesome than its taking out; both requiring a gang of men with hoist appliances. It is not therefore singular that rolls are often allowed to run as long as they will, rather than increase efficiency at the cost of so much lost crushing time, and a considerable outlay for hoisting apparatus and labor.

USEFULNESS RECOGNIZED

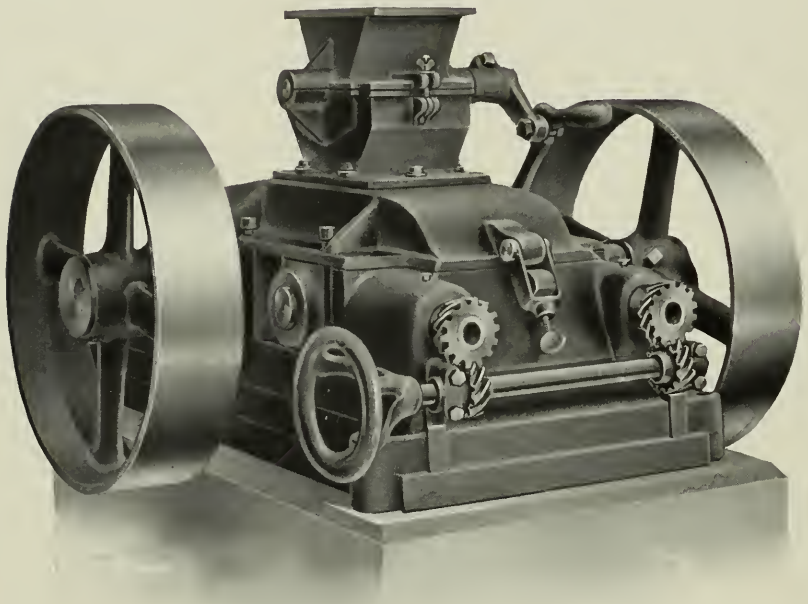
The quick appreciation by users of Sturtevant tire-turning attachments emphasizes the importance of this invention. One man can now keep a large plant of roll shells in perfect face.

FOR BALANCED AND PLAIN BALANCED ROLLS

Except the 8 x 5 and 12 x 12 Sizes

Approx. Dimensions — Length, 2 ft. 1 in. Width, 2 ft. 6 in. Height, 2 ft. 6 in.
Approx. Weight, 685 lbs. Code word, Ctryx.

STURTEVANT LABORATORY ROLLS



PATENTED

8 x 5 Sampling Roll (with Automatic Feeder)

The above illustrates the simplest, heaviest, most accessible and complete laboratory crushing Roll ever built. It is designed for sampling purposes, and is complete ready for belt when shipped.

This little Roll is intended to take ore from Sturtevant Laboratory Crushers and reduce to fine sand rapidly and economically. It requires little power to drive and will run smoothly on any bench or floor.

It is the only first class Sampling Roll that we know of, and is designed to meet the special requirements of assay work.

This solid machine can be automatically regulated for coarse or fine reduction by the cross shaft, hand wheel adjustment, and has adjustable spring pressures, which allow a great variety of output. It is convenient and inexpensive.

The cover opens and carries the side plates and hopper. Every part is exposed, accessible for cleaning or replacing. This machine is seen to be massive and durable.

Able to do fine or coarse work, its output, reduced to fine sand, is astonishing. It is capable of taking and crushing hard rock from the Laboratory Crusher to 60 mesh or finer.

It is practically dust-proof, has our special car-box bearings, and is in all respects as carefully constructed as our large machines.

Our Automatic Feeder is supplied with these Rolls and spreads material evenly.

For Specification of Laboratory Rolls, see Page 14

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